REMARKS

Claims 1-5 and 7-14 currently appear in this application. The Office Action of August 22, 2005, has been carefully studied. These claims define novel and unobvious subject matter under Sections 102 and 103 of 35 U.S.C., and therefore should be allowed. Applicants respectfully request favorable reconsideration, entry of the present amendment, and formal allowance of the claims.

Claims 1, 2, 5 and 7 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Oba et al., JP 60-08326.

This rejection is respectfully traversed. Claims 1 and 8 have been amended to recite that the wavelength of the laser used is from about 390 to about 450 nm. Support for this amendment can be found in the specification as filed at page 31, lines 18-27.

As described in the amendment filed June 14, 2005, and in the Summary of the Invention, the combination of an organic dye compound having an absorption maximum at a wavelength longer than the wavelength of the writing light is a totally new idea conceived by the present inventors for the first time in the world. This new idea is very effective in widening the choices of the organic dye compounds that can be used in optical recording media on which information is recorded with a writing light having a relatively short wavelength, particularly in the range of 390 to 450 nm.

That is, the optical recording media of the present invention has a recording layer comprising an organic dye compound that shows an absorption maximum at a wavelength longer than the oscillation of wavelength of a laser used for

recording, but the organic dye compound absorbs the laser at a sufficient level to record information. Even though the organic dye compound has an absorption maximum greater than the wavelength of a laser used to record information, the organic dye compound still exhibits sufficient absorption to record information.

As the Examiner correctly indicates, example dye 2 of Oba differs from the dye of chemical formula 20 of the instant specification in the counterion. Therefore, Oba does **not** disclose the dye of the present invention.

Furthermore, while Oba discloses a dye having a similar structure, there is nothing in Oba that discloses or even suggests an optical recording medium that is recorded with a laser bean with a wavelength of **about 390 to 450 nm**. Oba disclose examples of optical recording media on which information is recorded with a laser beam having a wavelength of **790 nm**. There is nothing in Oba that would lead one skilled in the art to produce a recording medium that can be used with a laser having a wavelength of 390-450 nm.

With respect to this point, the Examiner states that example dye 2 of Oba, which is similar to but not identical to the dye of chemical formula 20 of the instant specification, can be used for recording at least one wavelength of less than 450 nm because "similar compound 20 is used in example 2 with 450 nm lasers in the instant specification." It is respectfully submitted that this assertion is completely hindsight. As the declaration of Fumio MATSUI filed June 20, 2005, stated, prior organic dyes used for optical recording media absorb laser light having a **longer** wavelength region than the absorption maximum of the organic dye. Therefore, one skilled in the art reading Oba would assume that the

organic dye absorbs the laser light at a longer wavelength region than the absorption maximum of the organic dye. It was only with the present invention that one could appreciate that some organic dye compounds could be used that absorb laser light having a shorter wavelength than the wavelength of the laser light.

The Examiner agrees that the use of shorter wavelengths leads to increased data density due to the wavelength dependency of the diffraction focusing limit. However, contrary to the Examiner's assertion, the claims require that the organic dye compound be suitable for use with a laser having an oscillation wavelength of **about 390 to about 450 nm**. What is claimed herein is an optical recording medium for recording with laser light having an oscillation wavelength of about 390 to about 450 nm. One skilled in the art would understand that this optical recording medium is one that is operative when the wavelength of the laser light is about 390 to about 450 nm. The Examiner has not cited anything showing an organic compound absorbing laser light at a wavelength lower than the organic compound's absorption maximum.

The Examiner has referred to Ootaguro et al., sating that Ootaguro et al. teach that 4-N,N-diethylamino-4'-nitrosodiphenylamine has an absorption maximum at 440 nm. However, it should be noted that the nitroso disclosed in Ootaguro et al. is merely a light resistance improver. Ootaguro et al. never disclose an optical recording medium on which information is recorded with a laser beam with a wavelength of 30-450 nm. It is respectfully submitted that Ootaguro et al. teach nothing about the claimed invention, as

protection from light damage has nothing to do with optical recording.

With respect to Oba, the optical recording medium disclosed therein has a recording capacity of at most a **mega-byte level.** Submitted herewith is a copy of *Magneto-Optical Recording Materials*, edited by Richard J. Gambino, IEEE Press, 2000, pages 1-3. Attention is directed to Figure 1.2 on page 3, Evolution of optical storage technology. In contrast to this, the recording capacity of the optical recording medium of the present invention is at the **giga-byte level**, as shown in Example 2 of the instant specification.

Claims 1, 4, 5 and 7 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Okamoto et al.

This rejection is respectfully traversed. The optical recording medium of Okamoto is not the same as the optical recording medium of the present invention because the Okamoto recording medium does not have "a recording layer to which information is recorded using a laser with an oscillation wavelength of about 390 to about 450 nm", nor "an organic dye compound that shows an absorption maximum at a wavelength longer than the oscillation wavelength of said laser beam", as claimed herein. The present invention requires that the recording medium be used with a laser with an oscillation wavelength of about 390 to about 450 nm, and that the recording medium contain an organic dye compound that shows an absorption maximum at a wavelength loner than the oscillation wavelength of the laser beam. These two characteristics are indispensable to provide an optical recording medium having a recording capacity at the **giga-byte** level.

Claims 1-3, 5 and 7 are rejected under 35 U.S.C. 102(b) as being fully anticipated by Shinkai et al.

This rejection is respectfully traversed. The recording medium of Shinkai et al. does not have "a recording layer to which information is recorded by using a layer with an oscillation wavelength of about 390 nm to 450 nm." The recording medium of Shinkai et al. is used with a layer having an oscillation wavelength of about 630 nm to 680 nm.

Furthermore, Shinkai et al. never teach the combination of "a recording layer to which information is recorded by using a laser with an oscillation wavelength of about 390 nm to about 450 nm" or "an organic dye compound which shows an absorption maximum at a wavelength longer than the oscillation wavelength of the laser beam." These two recitations are indispensable in providing an optical recording medium having a recording capacity at a giga-byte level.

Claims 1, 2, 5-9 and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nanba et al.

This rejection is respectfully traversed. Submitted herewith is the declaration of Mr. Matsui, one of the present inventors. As can be seen, Mr. Matsui declares that "the optical recording medium of this invention is still entirely novel against JP60-204396 (*i.e.*, Nanba et al.)", in paragraph 6 of the declaration. While "JP60-204396 teaches in fact that data can be wrote [sic] in and read out from such an optical recording medium with the use of a laser whose wavelength lies within the range of 40 nm shorter to 70 nm longer than the absorption maximum wavelength of an organic dye", "JP60-204396 is entirely silent on violet or blue laser per se, as well as disclosing or teaching nothing about the feasibility of such a

recording strategy in optical recording medium using violet or blue laser as light source."
(paragraph 7).

It should also be noted that Nanba never states that a He-Cd laser having a wavelength of 442 nm or 325 nm is used, despite the Examiner's assertion that the wavelength of the He-Cd laser of Nanba is 442 nm or 325 nm. Attention is directed to the fact that a He-Cd laser has oscillation wavelengths at 533.8 nm, 537.8 nm, and 636.0 nm, as well as at 442 nm and 325 nm. It is therefore respectfully submitted that the Examiner's assertion that Nanba uses a He-Cd layer having a wavelength of 442n nm or 325 nm has no reasonable ground.

Rather, it is considered reasonable that Nanba uses a He-Cd laser having an oscillation wavelength of 533.8 nm, 537.8 nm or 636.0 nm rather than that of 442 nm or 325 nm because the former wavelengths are closer to 750 nm, 780 nm or 830 nm used in Nanba (please see line 8, right lower corner, page 15, to right upper corner, page 16).

It is therefore respectfully submitted that there is nothing in Nanba that would lead one skilled in the art to believe that Nanba had intended to use a He-Cd laser having as short an oscillation wavelength as 442 nm or 325 nm to record information, even if there had been a laser having an oscillation wavelength of 442 nm or 325 nm among the He-Cd lasers.

As noted above, as shown in Figure 1.2 of the enclosed reference, the recording capacity of an optical recording medium was at most at the mega byte level at the time Nanba's invention was made, *i.e.*, 1984. It is therefore not believable that Nanba had expected to produce a recording

medium having a recording capacity at the giga byte level, such as Blu-ray Disc or HD DVD-R.

Nanba teaches nothing about the herein claimed optical recording medium, which has "a recording layer to which information is recorded by using a layer with an oscillation wavelength of about 390 nm to about 450 nm" and "an organic dye compound which shows an absorption maximum at a wavelength longer than the oscillation wavelength of said laser."

Claims 1-5 and 7-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over any one of Nanba et al., Oba et al., Okamoto et al., or Shinkai et al. in view of Ootaguro et al. and Nanba et al.'231.

This rejection is respectfully traversed. AS noted above, none of Nanba, Oba, Okamoto, Shinkai or Ootaguro teaches the combination of "a recording layer to which information is recorded by using a laser with an oscillation wavelength of about 390 nm to about 450 nm" and "an organic dye compound which shows an absorption maximum at a wavelength loner than the oscillation wavelength of said laser beam," the two requirements of the present invention to produce an optical recording medium having a recording capacity at the giga byte level. Merely because a number of dyes are disclosed that cover the spectral range, or a number of lasers of varying wavelengths are disclosed does not lead one skilled in the art to a recording layer to which information is recorded by using a laser with an oscillation wavelength of about 390 nm to about 450 nm and an organic dye compound which shows an absorption maximum at a wavelength loner than the oscillation wavelength of said laser beam.

Nanba'231 discloses an optical recording medium which comprises a recording layer having 80% or more light absorption rate in the range of 400 nm to 900 nm as shown in Figure 7. That is to say, an optical recording medium disclosed in Nanba'231 is considered to have constant recording capacity irrespective of the wavelength of the laser beam used. It is believed that the optical recording medium disclosed in Nanba'231 is completely different from the herein claimed optical recording medium, and that Nanba'231 suggests nothing about the herein claimed invention.

Claims 1-5 and 7-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over any one of Nanba et al., Oba et al., Okamoto et al., or Shinkai et al. in view of Ootaguro et al. and Nanba et al.'231, further in view of Nee'811 combined with Hamer, "The Cyanine dyes and Related Compounds", pages 244-269, 274-279 and 398-433 (1964), Huditch et al.'584 and Saito et al.'089.

This rejection is respectfully traversed. It is not understood how one skilled in the art would combine the above-cited references to obtain the combination of a recording layer to which information is recorded by using a laser with an oscillation wavelength of about 390 nm to about 450 nm" and "an organic dye compound which shows an absorption maximum at a wavelength loner than the oscillation wavelength of said laser beam", which is required in the present invention to produce an optical recording medium having a recording capacity at the giga byte level. There is no suggestion in any of the cited references that an optical recording medium can be produced that has a capacity at the giga byte level. The present optical recording medium is the first that specifically requires a recording layer to which information

is recorded by using a laser with an oscillation wavelength of about 390 nm to about 450 nm" and "an organic dye compound which shows an absorption maximum at a wavelength loner than the oscillation wavelength of said laser beam."

It is noted that the references made of record but not applied are merely considered to be pertinent to applicant's disclosure.

In view of the above, it is respectfully submitted that the claims are now in condition for allowance, and favorable action thereon is earnestly solicited.

Respectfully submitted,

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